

Figure 1a

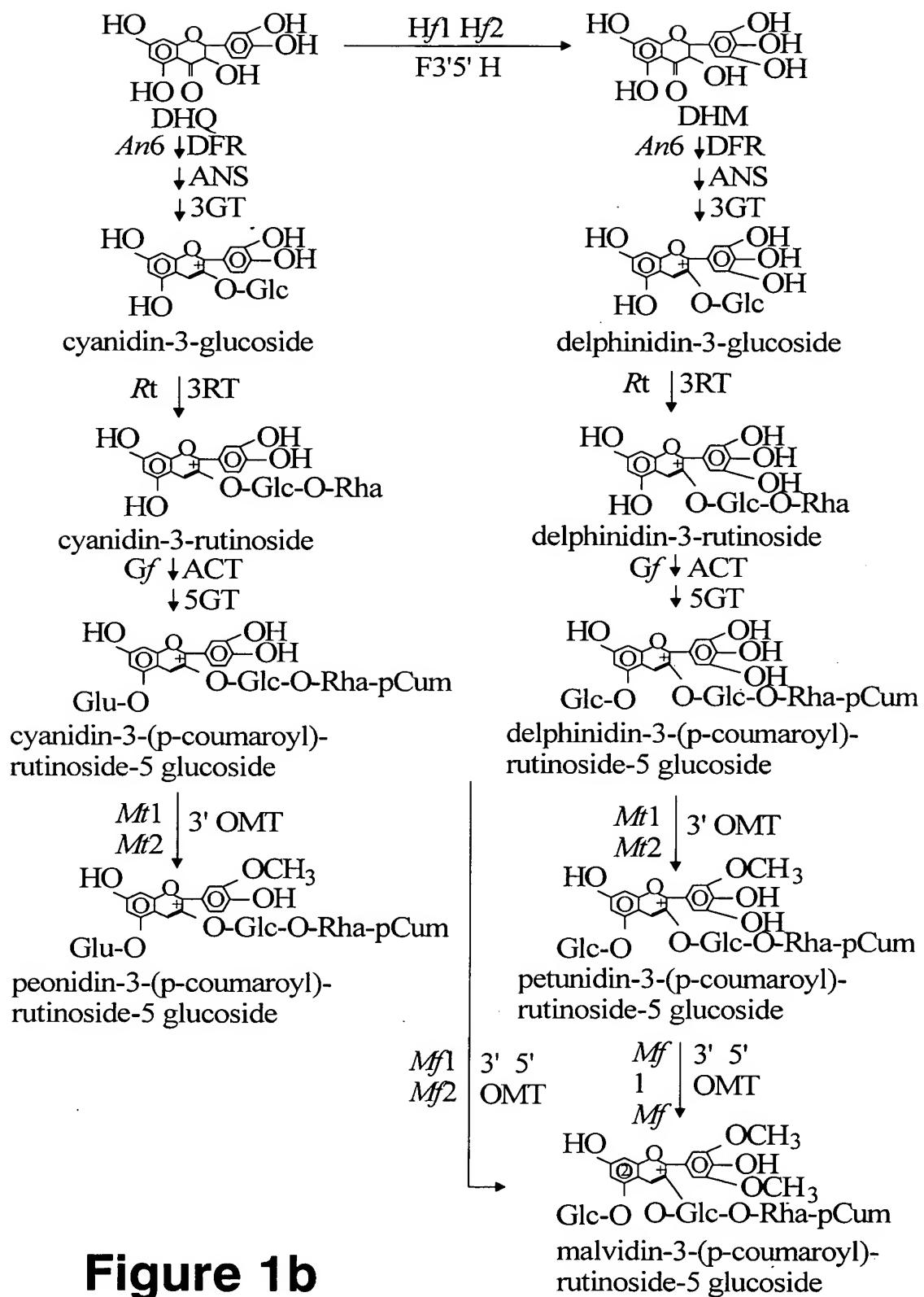


Figure 1b

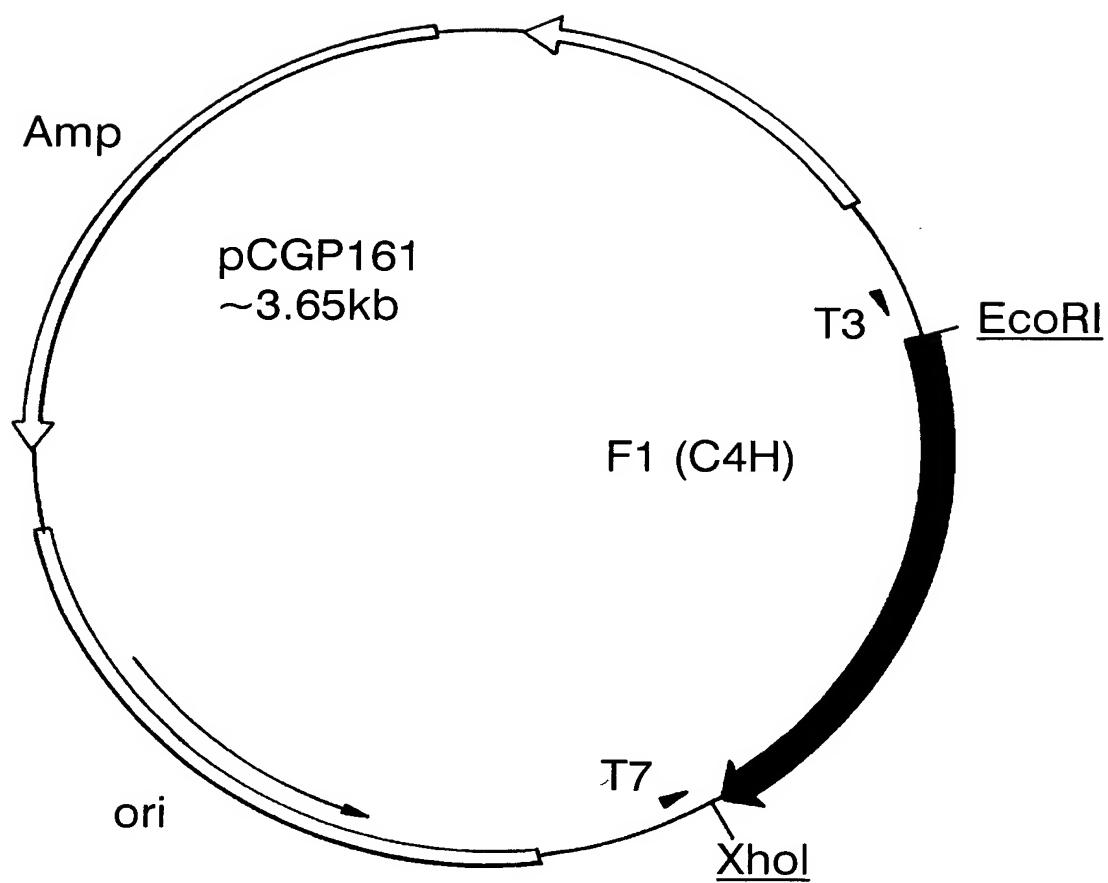


Figure 2

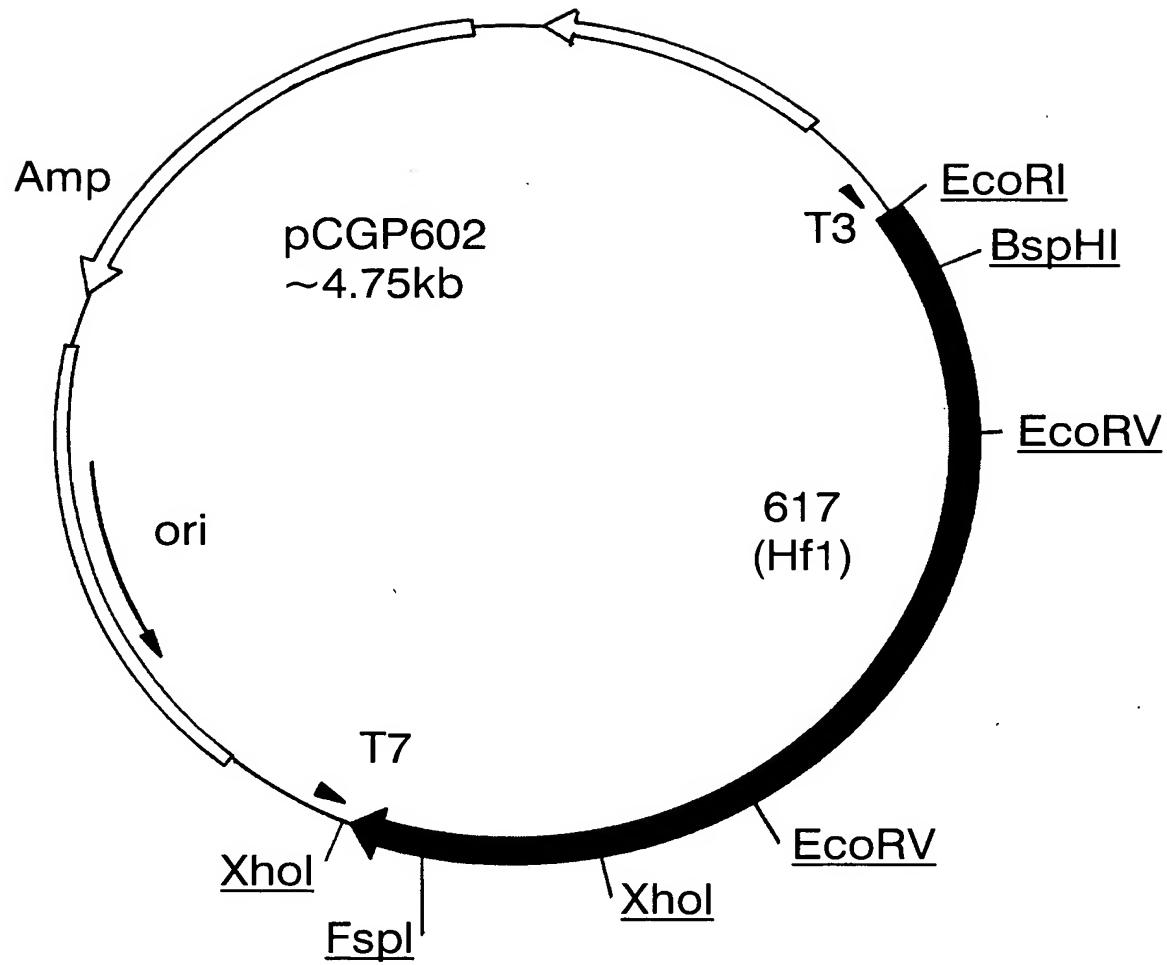


Figure 3

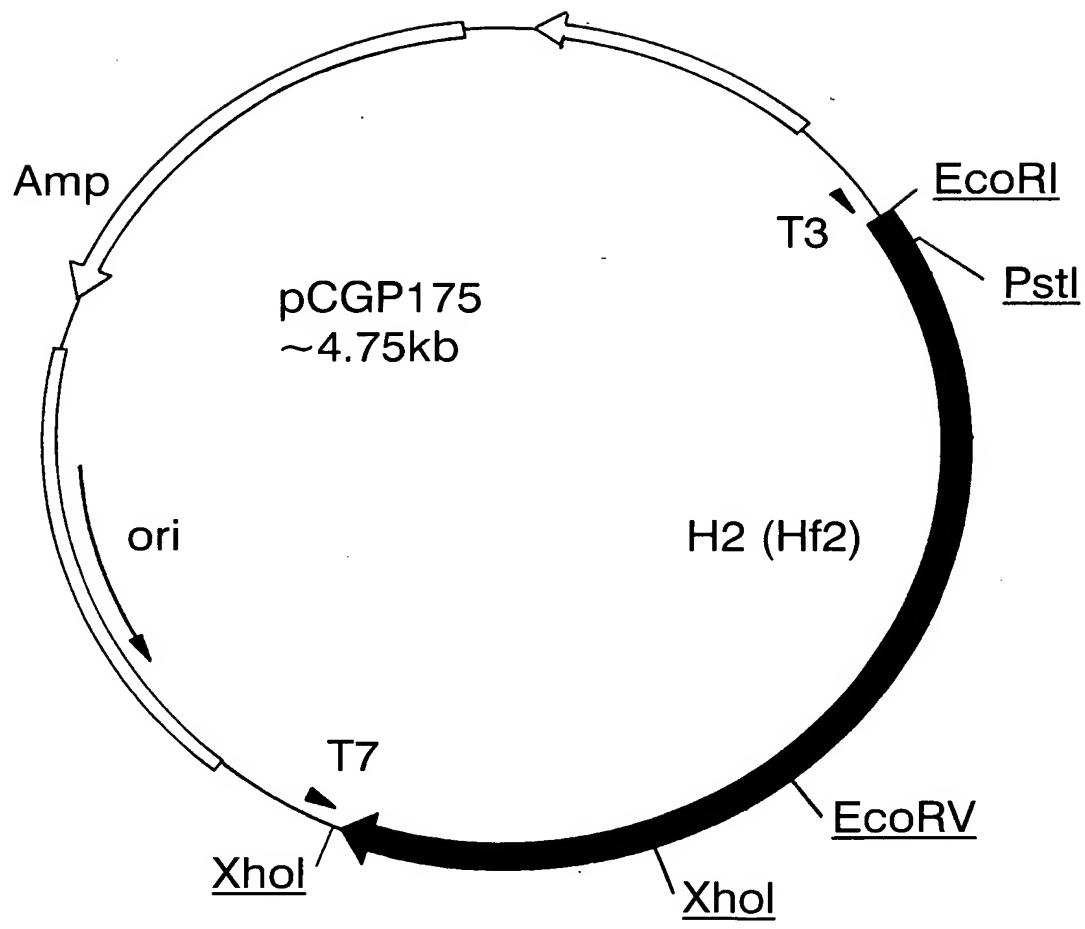


Figure 4

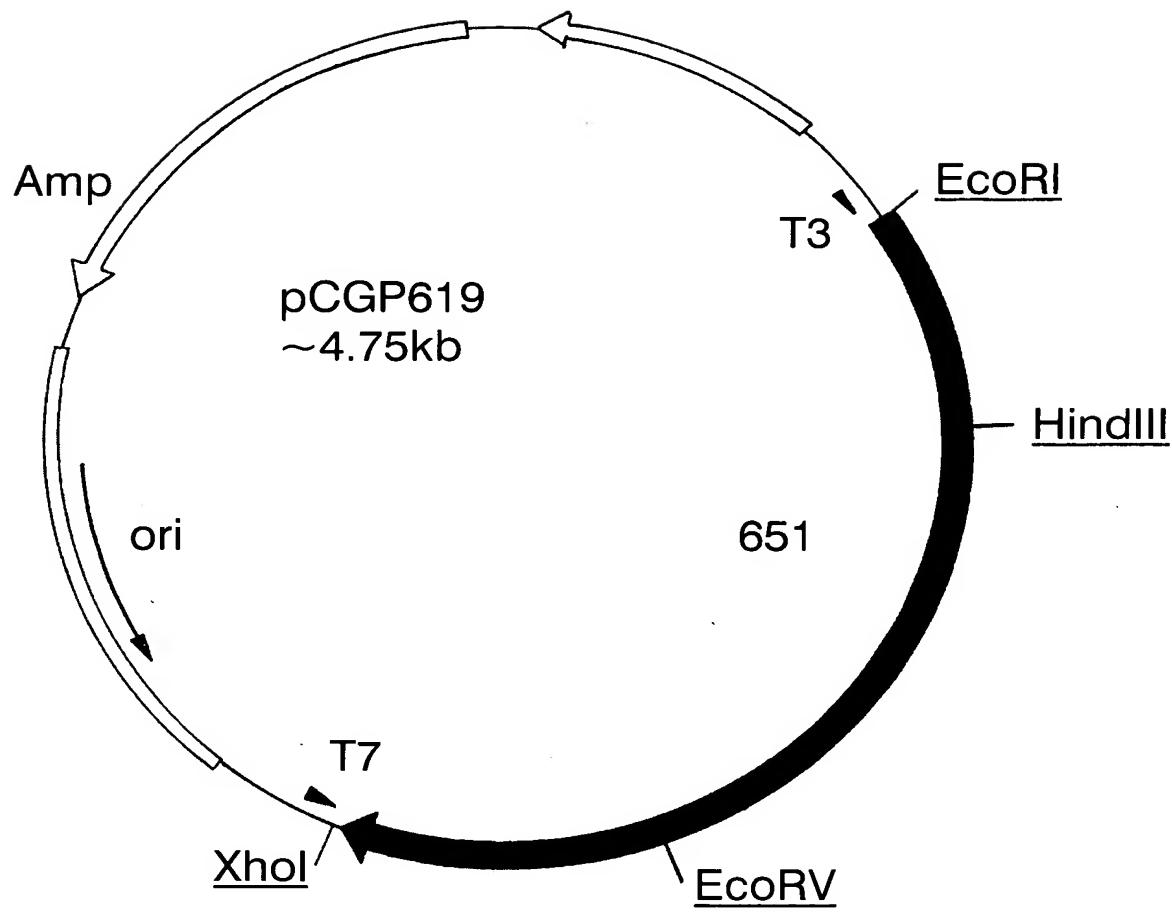


Figure 5

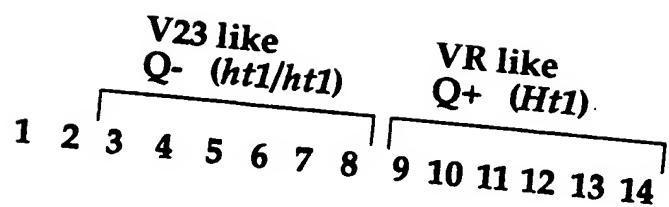


Figure 6

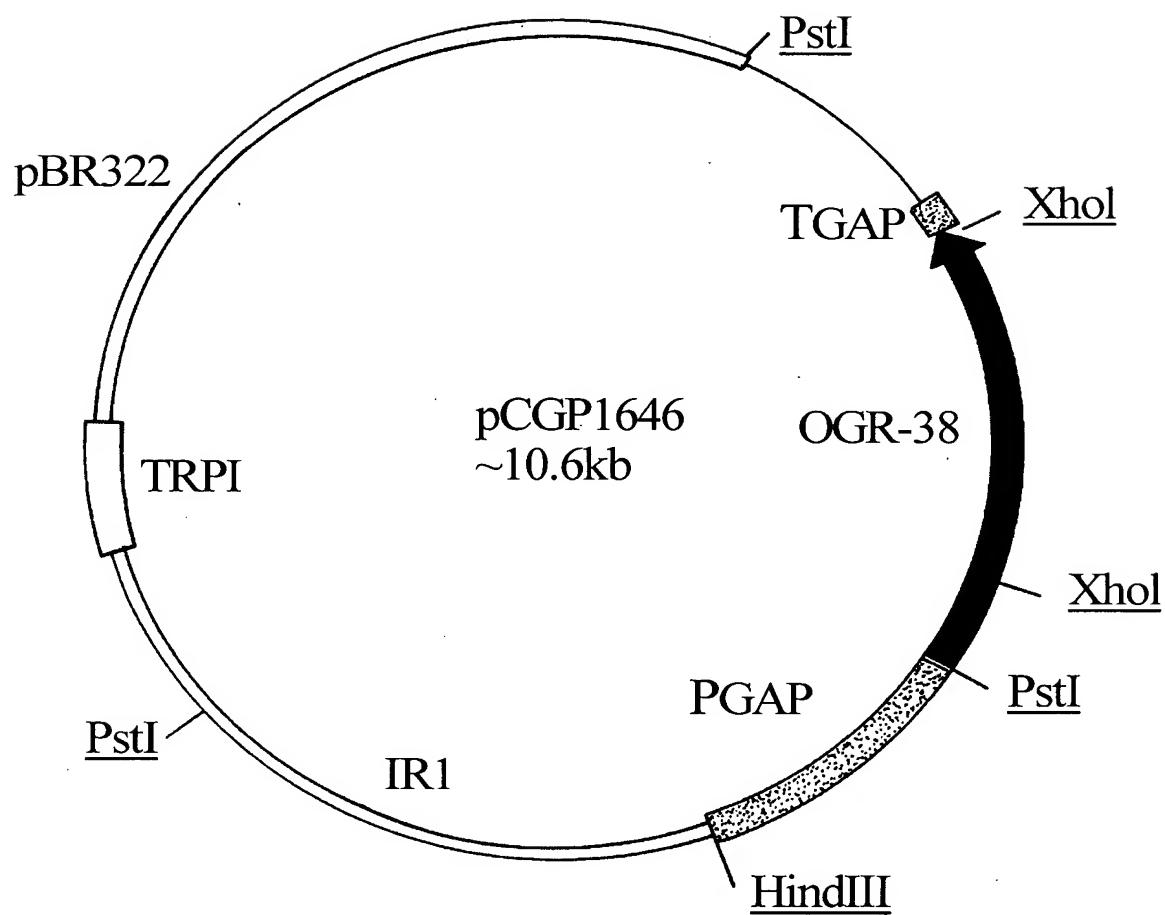


Figure 7

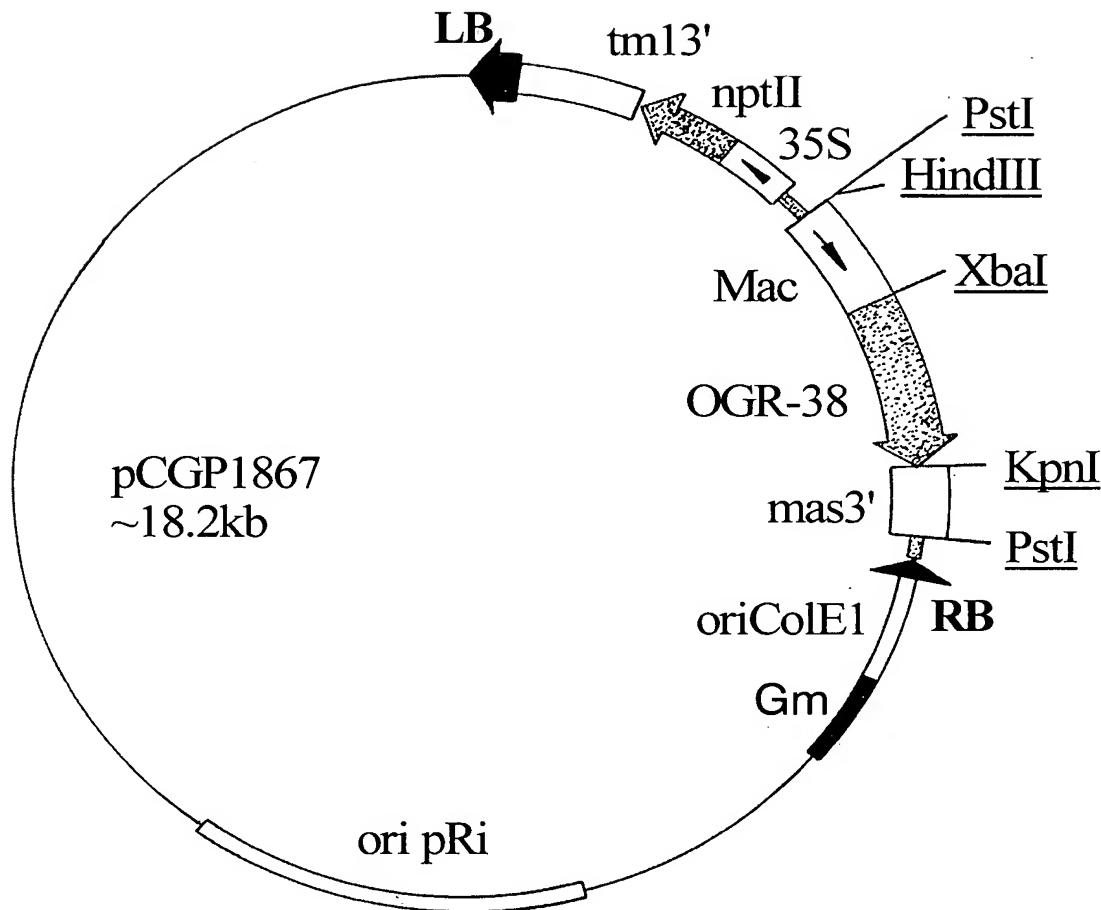


Figure 8

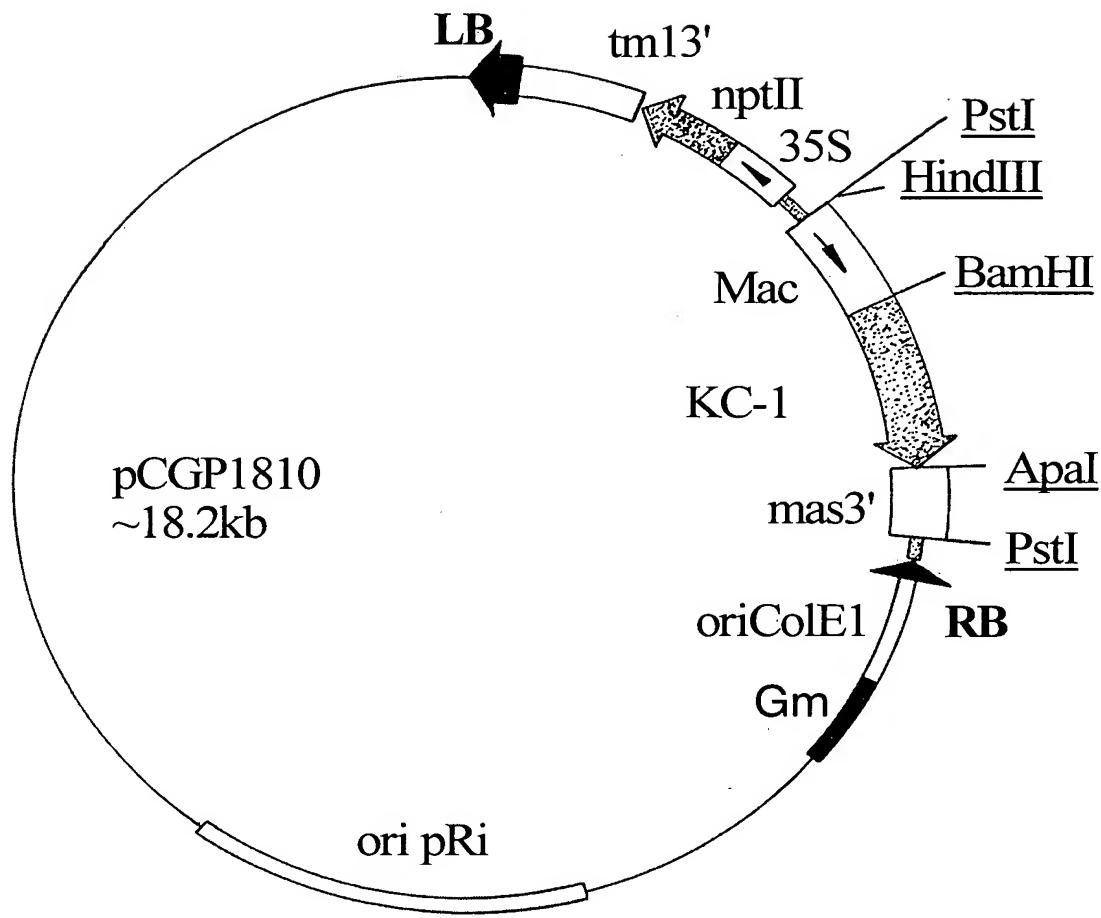


Figure 9

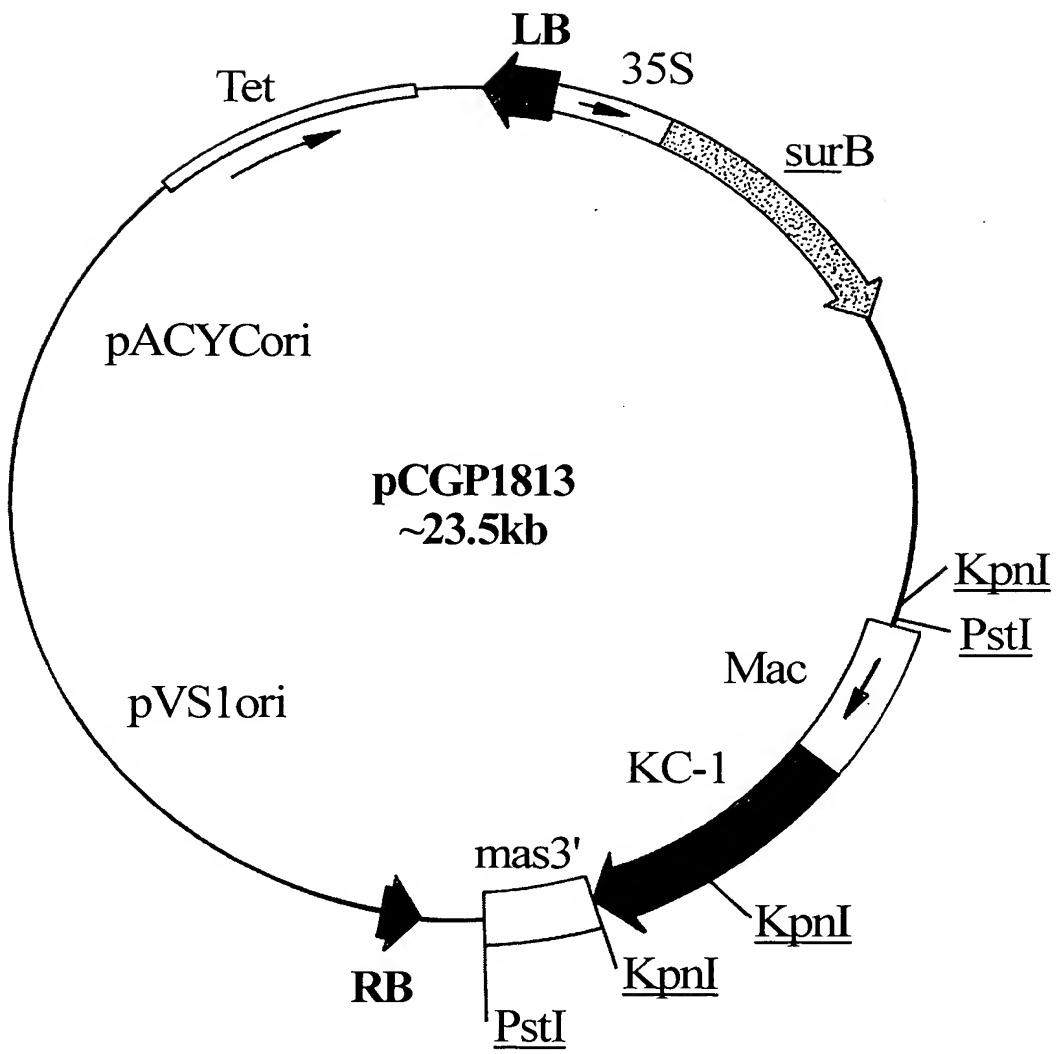


Figure 10

N8K16 *N8 x K16 F2 population*

+	-	/+	+	+	+	+	-	+	+	-	+	-	-	+
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15



Figure 11

CYANIDIN + CYANIDIN -
#1 #3 #4 #5 #8 #6 #11 #12 #13L



Figure 12

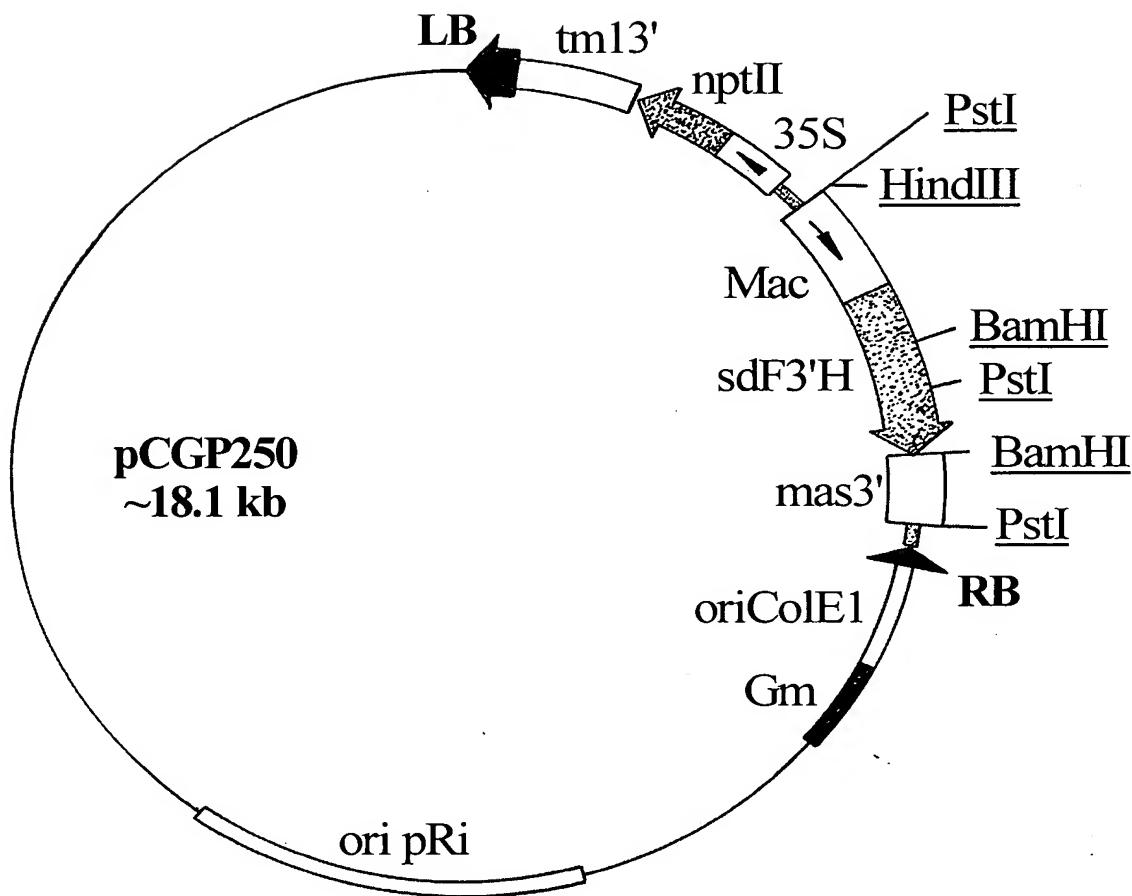


Figure 13

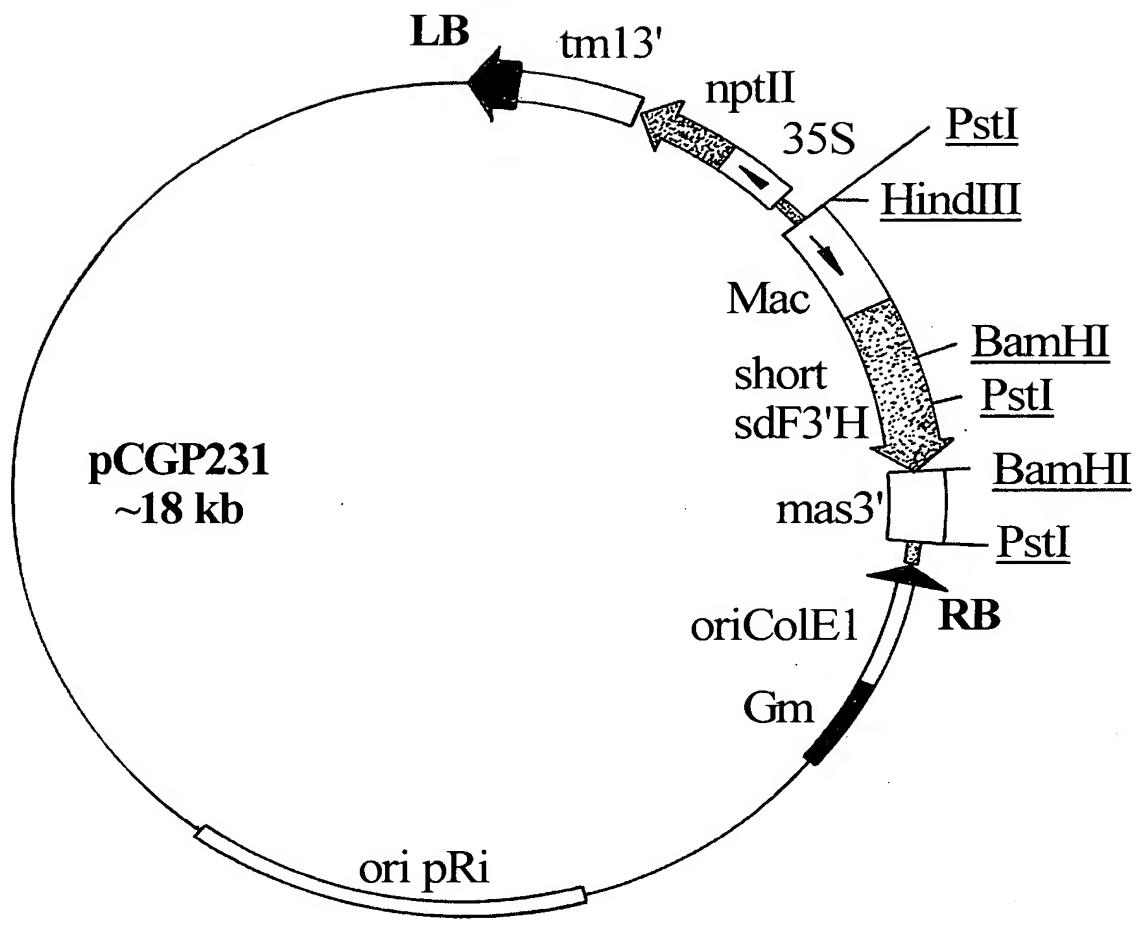


Figure 14

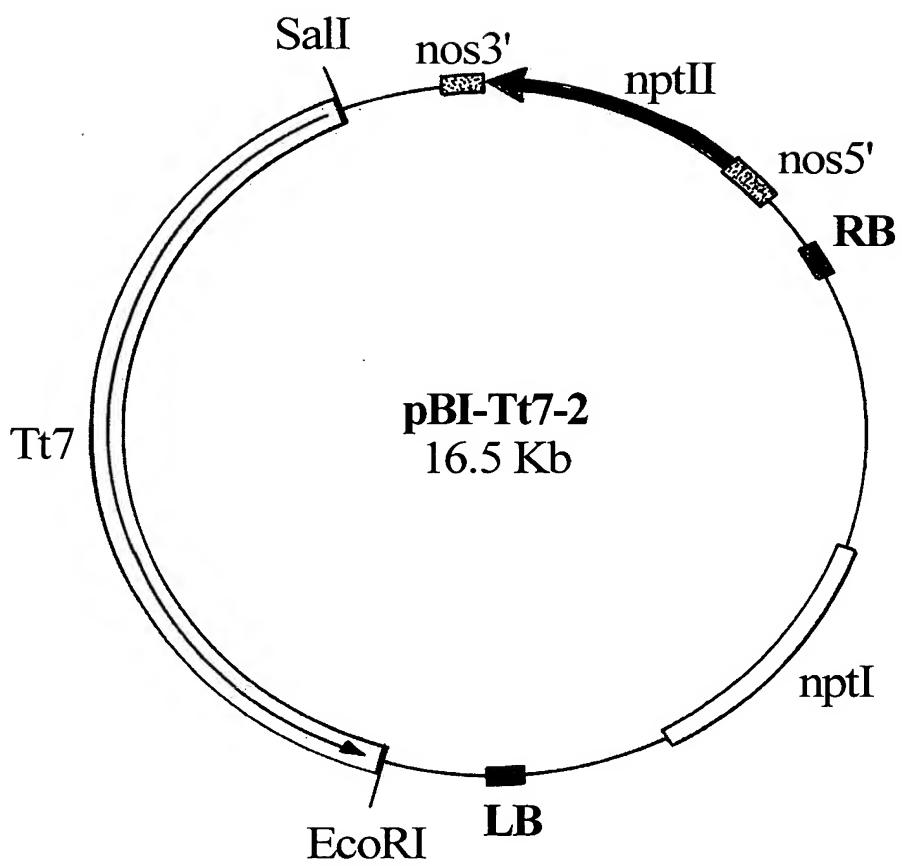


Figure 15

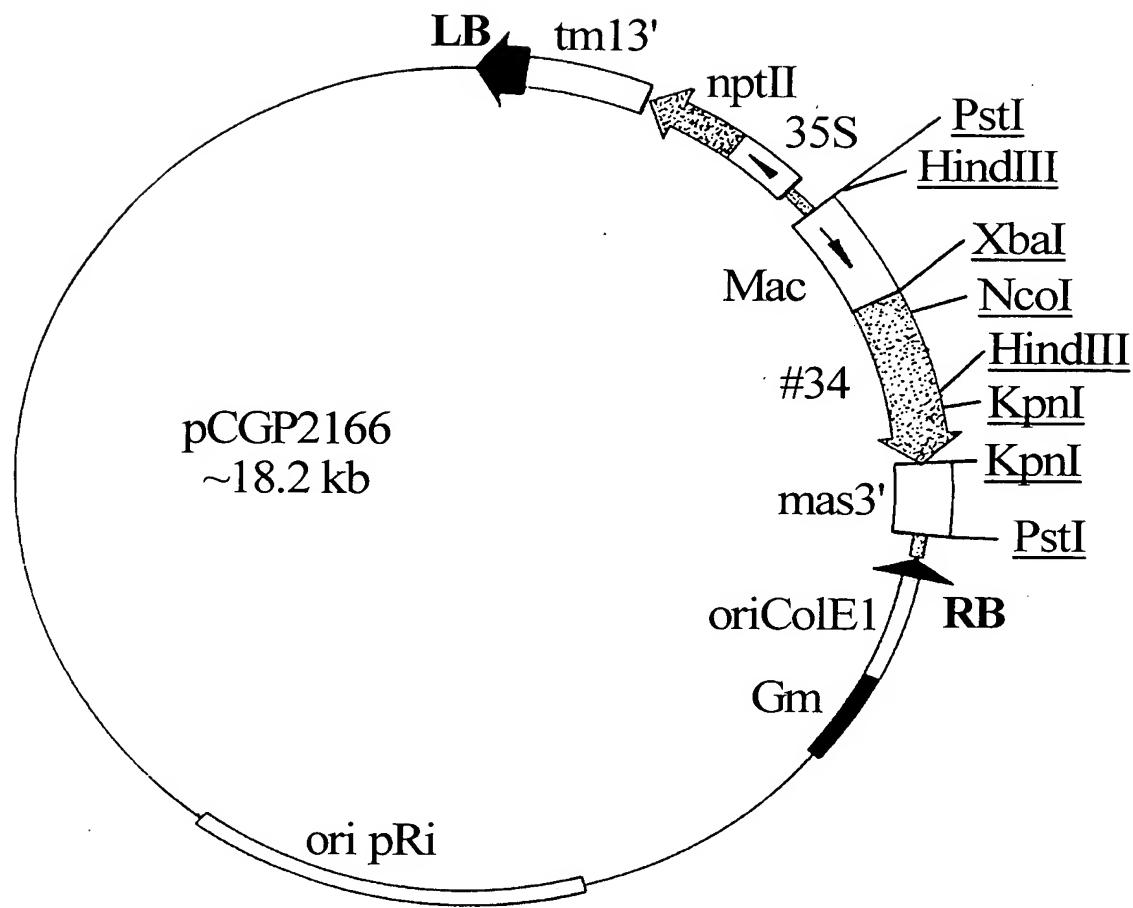


Figure 16

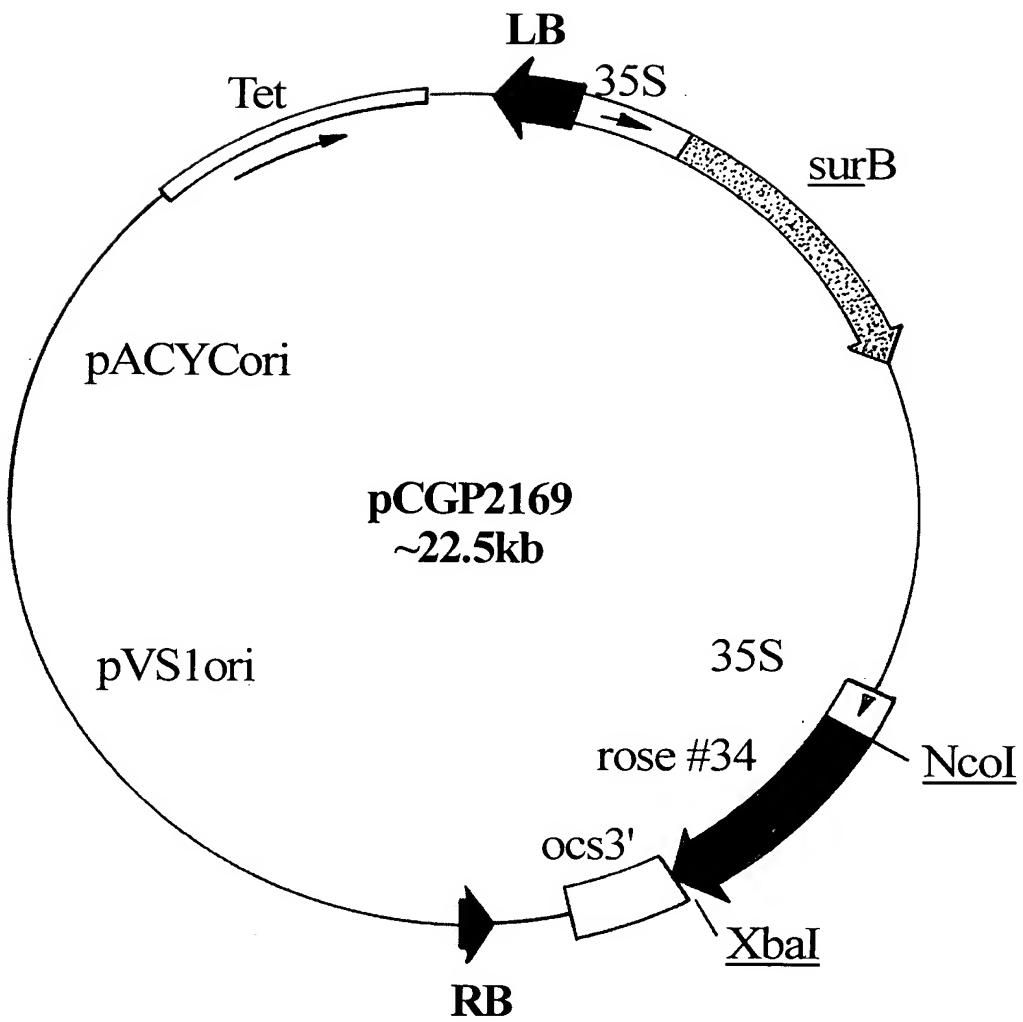


Figure 17

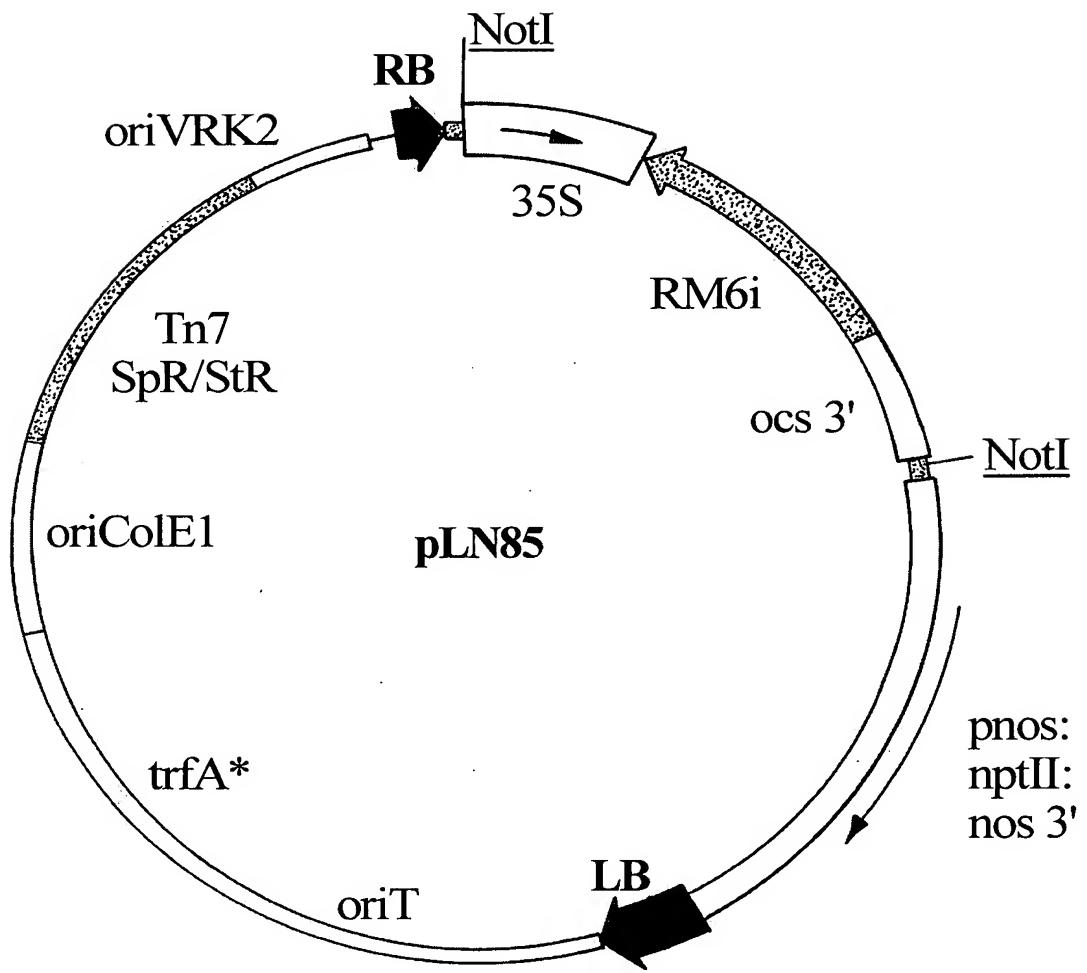


Figure 18

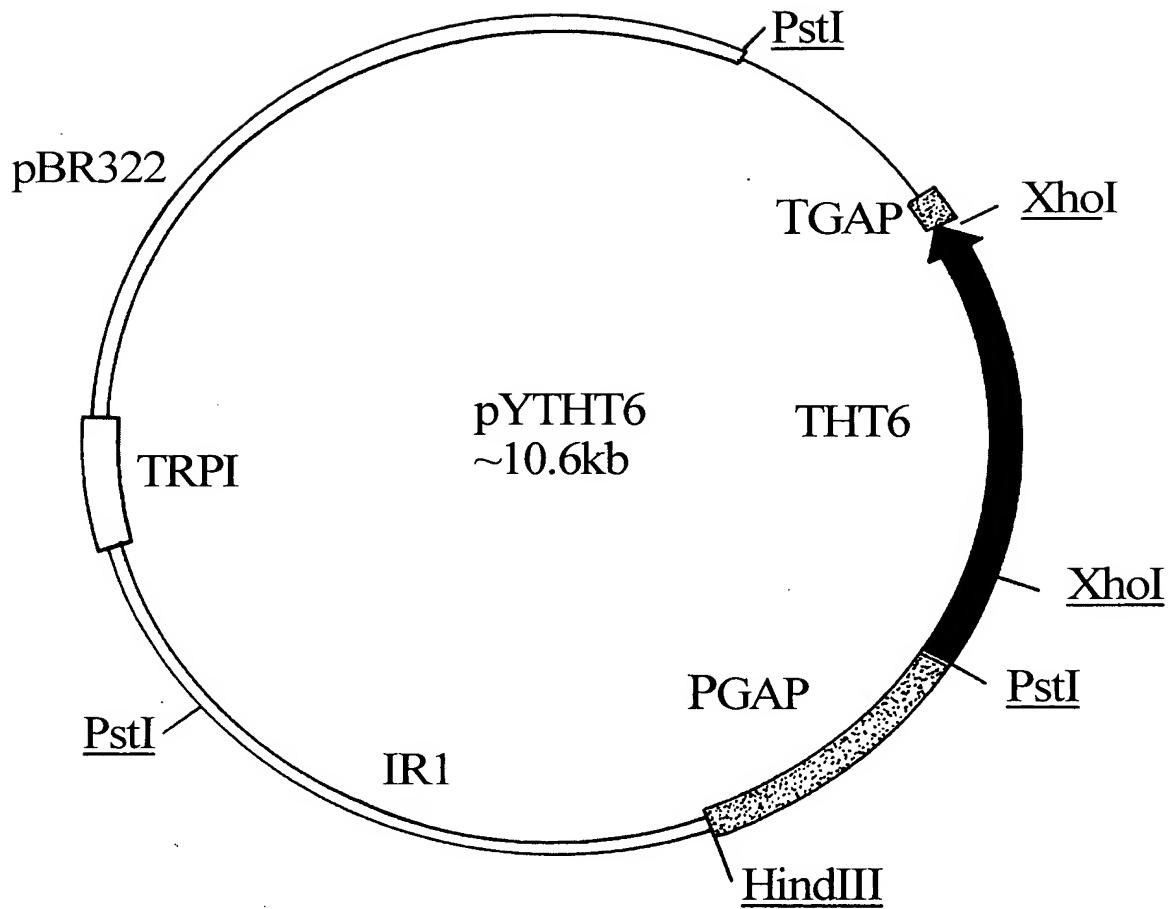


Figure 19

A

A

K 21 m s l r - r r K i s k k L P P G P f P i P I I G N L h l L G 49
0

A 22 r - s f f r k R y p l p P P G P K P W P I I G N L v H L G 50
B 12 f r g - - - h q k p L P P G P R P W P I V G N L P H M G 36
C 31 1 1 y s f i n K k v k p L P P G P K P W P I V G N L P H L G 60
D 21 f s h r r n r s h n n r L P P G P n P W P I I G N L P H M G 50
E 20 f s g k s q r - h s l p L P P G P K P W P V V G N L P H M G 48
F 22 n l s - - s R k s a r L P P G P t P W P I V G N L P H L G 48
G 24 1 1 f s g q g R - - r l L P P G P R P W P L V G N L P H L G 51
H 20 1 r - - v k q R y p l p L P P G P K P W P V L G N L P H L G 47
I 1 / P I I G N I P H L G 10
J 1 / P I I G N I P H L G 0

m d y v n I I I g L f f t w F L v n g L 20
0

A 1 m e i l s 1 I I I y t V i f s f I L q f i L 21
B 1 / m q h q y y s l i t m d d i s I I I t s I L v p c t F I I g f L 30
C 1 / m a t I f I L t i I L a t v I F L i I r I 20
D 1 / m f I i V v i t f I f a v F L f r I L 19
E 1 / m t i l a f y a L i I g s v L y v f L 21
F 1 / m s p l a l m i s t l L g f I Y h s l r L 23
G 1 / m s l t l I f c t L v f a i F L y f l I 19
H 1 / 0
I 1 /
J 1 /
K 1 /

Figure 20a

A

A

A	51	p	K	P	H	Q	S	t	A	A	M	A	Q	t	Y	G	P	L	M	y	L	K	M	G	F	V	D	V	V	V	A	80
B	37	q	a	P	H	Q	g	L	A	A	L	A	Q	k	Y	G	P	L	L	y	M	R	L	G	Y	V	D	V	V	V	A	66
C	61	p	K	P	H	Q	S	M	A	A	L	A	R	v	h	G	P	L	I	H	L	K	M	G	F	V	h	V	V	V	A	90
D	51	t	K	P	H	R	T	L	S	A	M	v	t	Y	G	P	L	L	R	L	G	F	V	D	V	V	V	V	A	80		
E	49	p	f	P	H	H	S	I	A	e	L	A	K	k	h	G	P	L	M	H	R	L	G	Y	V	D	V	V	V	A	78	
F	49	p	i	P	H	H	A	A	L	A	K	k	Y	G	P	L	M	H	L	R	L	G	c	V	D	V	V	V	A	78		
G	52	p	K	P	H	a	S	M	A	e	L	A	R	a	Y	G	P	L	M	H	L	K	M	G	F	V	h	V	V	V	A	81
H	48	k	K	P	H	Q	S	I	A	A	M	A	e	r	Y	G	P	L	M	H	L	R	L	G	F	V	D	V	V	V	A	77
I	11	s	K	P	H	Q	T	L	A	e	M	A	K	t	Y	G	P	L	M	H	L	K	f	G	1	k	D	a	V	V	A	40
J	1																													0		
K	50	n	H	P	H	K	S	L	A	q	L	A	K	q	L	N	M	N	L	K	L	G	q	L	n	t	V	V	i	79		

A	81	A S A S V A	a Q F L K t	H D A N F S	S R P P N S G A e	H M A	110
B	67	A S A S V A	t Q F L K t	H D [] N F S	S R P P N S G A K H I A	96	
C	91	S S A S V A	e k F L K v	H D A N F S	S R P P N S G A K H V A	120	
D	81	A S [k] S V A	e Q F L K i	H D A N F A S R P P N S G A K H M A	110		
E	79	A S A S V A	a Q F L K t	H D A N F S	S R P P N S G A K H L A	108	
F	79	A S A S V A	a Q F L K v	H D A N F A S R P P N S G A K H V A	108		
G	82	S S A S [a] A	e Q [c] L K v	H D A N F I S R P P N S G A K H V A	111		
H	78	A S A A V A	a Q F L K v	H D S N F S n R P P N S G A e H I A	107		
I	41	S S A S V A	e Q F L K k	H D [v] N F S n R P P N S G A K H I A	70		
J	80	S S S v V A r	v L Q k Q D T F S n R f v p d v v H v r n	0			
K							

m

2

Figure 20b

B

A	111	Y N Y Q D L V F A P Y G P R W R M L R K I C S V H L F S T K	140
B	97	Y N Y Q D L V F A P Y G P K W R M L R K I C S L H M F S S K	126
C	121	Y N Y Q D L V F A P Y G P R W R M L R K I C A L H L F S A K	150
D	111	Y N Y Q D L V F A P Y G h R W R L L R K I S S V H L F S A K	140
E	109	Y N Y Q D L V F r P Y G P R W R M f R K I S S V H L F S g K	138
F	109	Y N Y Q D L V F A P Y G P R W R L L R K I C S V H L F S A K	138
G	112	Y N Y E D L V F r P Y G P K W R L L R K I C A q H I F S v K	141
H	108	Y N Y Q D L V F A P Y G P R W R M L R K I T S V H L F S A K	137
I	71	Y N Y Q D L V F A P Y G P R W R L L R K I C S V H L F S A K	100
J			0
K	110	h s d f s V V w 1 P v N s R W K t L R K I m n s s i F S g n	139

A	141	A L D D F R H V R Q D - - - E V k t L T R A L A s A G q k P	167
B	127	A L D D F R I V R Q E - - - E V S I L v n A i A k A G t k P	153
C	151	A L D D F t H V R Q D - - - E V g I L T R v L A d A G e t P	177
D	141	A L E D F K H V R Q E - - - E V g t L T R e L v r v G t k P	167
E	139	A L D D I K H V R Q E - - - E V S V L A H A L A n S G s k v	165
F	139	A L D D F R H V R Q E - - - E V A V L T R v L i s A G n s P	165
G	142	A M D D F R R V R E E - - - E V A I L S R A L A - - G k r a	166
H	138	A L D D F c H V R Q E - - - E V A t L T R S L A s A G k t P	164
I	101	A L D D F Q H V R h E - - - E I C I L i R A i A s g G h a P	127
J		r i L T R S i A s A G e n P	14
K	140	k L D g n Q H L R s k k v q E L i d y C Q k c A k n G e - a	168

C

Figure 20c

Figure 20d

C		D	
A	168 V k L G Q L L N V C T T N A L A R V M L G K R V F a d G s G	197	
B	154 V Q L G Q L L N V C T T N A L S R V M L G K R V I G d G t G	183	
C	178 L k L G Q M M N t C A T N A I A R V M L G R R V V G h a d -	206	
D	168 V N L G Q L V N M C v N A L g R e M I G R R L F G - - a	194	
E	166 V N L a Q L L N L C T v N A L g R V M V G R R V F G d G s G	195	
F	166 V Q L G Q L L N V C A T N A L A R V M L G R R V F G - - d	192	
G	167 V p i G Q M L N V C A T N A L S R V M M G R R V V G h a d G	196	
H	165 V k L G Q L L N V C T T N A L A R V M L G R K V F N d G g s	194	
I	128 V N L G K L L G V C T T N A L A R V M L G R R V F e - G d G	156	
J	15 I N L G Q L L G V C T T N A L A R V M L G R R V F G d G s G	44	
K	169 V d i G R a t f g T T I N I L S n t I f s K d L t N - - -	194	
A	198 d v D P Q A a E F K S M V V E M M V V A G V F N I G D F I P	227	
B	184 k s D P K A E E F K d M V L E L M V L T G V F N I G D F V P	213	
C	207 - - s K A E E F K A M V V E L M V L A G V F N L G D F I P	233	
D	195 d a D h K A D E F R S M V t E M M a L A G V F N I G D F V P	224	
E	196 g d D P K A D E F K S M V V E M M V L A G V F N I G D F I P	225	
F	193 g i D r s A n E F K d M V V E L M V L A G e F N L G D F I P	222	
G	197 t n D a K A E E F K A M V V E L M V L S G V F N I G D F I P	226	
H	195 k s D P K A E E F K S M V e E M M V L A G s F N I G D F I P	224	
I	157 g e n P H A D E F K S M V V E I M V L A G a F N L G D F I P	186	
J	45 g v D P Q A D E F K S M V V E I M V L A G a F N L G D F I P	74	
K	195 p f s d s A k E F K e L V w n I M V e A G k p N L v D Y f P	224	

D

A	228	q	L	n	W	L	D	I	Q	G	V	A	K	M	K	K	L	H	A	R	F	D	A	F	L	T	d					
B	214	a	L	E	c	L	D	L	Q	G	V	S	K	M	K	K	L	H	[R]	D	n	F	M	S	n	I	L	E	257			
C	234	p	L	E	k	L	D	L	Q	G	V	i	A	K	M	K	K	L	H	1	R	F	D	S	F	L	S	k	I	L	E	243
D	225	s	L	D	w	L	D	L	Q	G	V	a	g	K	M	K	R	L	H	k	R	F	D	A	F	L	S	s	I	L	g	263
E	226	s	L	E	w	L	D	L	Q	G	V	a	s	K	M	K	K	L	H	k	R	F	D	d	F	L	T	a	I	V	E	254
F	223	v	L	D	f	D	L	Q	G	I	T	k	K	M	K	K	L	H	v	R	F	D	S	F	L	S	k	I	V	E	255	
G	227	f	L	E	p	L	D	L	Q	G	V	a	s	K	M	K	K	L	H	A	R	F	D	A	F	L	T	e	I	V	r	256
H	225	v	L	g	W	f	D	V	Q	G	i	v	g	K	M	K	K	L	H	A	R	F	D	A	F	L	n	t	I	L	E	252
I	187	v	L	D	w	f	D	L	Q	G	i	A	g	K	M	K	K	L	H	A	R	F	D	k	F	L	n	g	I	L	E	216
J	75	a	L	D	w	f	D	L	Q	G	i	T	A	K	M	K	K	V	H	A	R	F	D	A	F	L	d	a	I	L	E	104
K	225	f	L	E	k	I	D	p	Q	G	i	k	r	R	M	t	n	n	f	T	K	F	i	g	1	I	S	g	L	I	D	254

A	258	E	H	K	g	k	-	-	-	-	i	f	g	e	m	k	D	L	S	T	L	I	S	L	K	n	d	d	a	282		
B	244	E	H	K	s	v	a	-	-	-	h	q	q	n	g	g	D	L	L	S	i	L	I	S	L	K	-	d	n	c	268	
C	264	D	H	K	i	N	s	s	-	d	e	t	k	g	H	s	-	D	L	L	n	m	L	I	S	L	K	d	a	d	d	291
D	255	E	H	e	m	N	g	-	-	-	q	d	q	K	h	t	D	M	L	S	T	L	I	S	L	K	g	t	d	l	280	
E	256	D	H	K	k	G	s	-	-	-	g	t	a	g	h	v	D	M	L	T	T	L	S	L	K	-	e	d	a	280		
F	253	E	H	K	t	a	p	-	-	-	g	g	1	g	h	t	D	L	L	S	T	L	I	S	L	K	d	d	a	278		
G	257	E	R	c	h	G	q	i	-	n	n	s	g	a	H	q	d	D	L	L	S	T	L	I	S	f	K	g	l	d	d	285
H	255	E	H	K	c	v	n	n	q	h	t	t	1	s	K	d	v	D	f	L	S	T	L	I	r	L	K	d	n	g	a	284
I	217	D	R	K	s	N	g	s	n	-	-	g	a	e	Q	y	v	D	L	L	S	V	L	I	S	L	Q	d	s	n	i	244
J	105	E	H	K	s	N	g	s	r	-	-	g	a	k	Q	h	v	D	L	L	S	m	L	I	S	L	Q	d	n	n	i	132
K	255	D	R	i	k	e	r	n	-	1	r	d	n	a	n	i	D	V	L	d	A	L	L	n	I	s	q	e	n	p	282	

E

Figure 20e

E

A	283	D N	d g	-	G K L T D T E I K A L L L N L F v A G T D T S S	310
B	269	D G	-	e G G K f S a T E I K A L L L N L F T A G T D T S S	296	
C	292	a e	-	- G G R L T D v E I K A L L L N L F A A G T D T T S S	318	
D	281	D G	-	- d G G s L T D T E I K A L L L N M F T A G T D T S A	308	
E	281	D G	-	e G G K L T D T E I K A L L L N M F T A G T D T S S	308	
F	279	i e	-	- G G K L T D T E I K A L L L N L F T A G T D T S S	305	
G	286	g d	-	- G s R L T D T E I K A L L L N L I - - - D T T S S	308	
H	285	D m	d c	- G K L T D T E I K A L L L N L F T A G T D T S S	314	
I	245	D G	g d	e G t K L T D T E I K A L L L N L F i A G T D T S S	274	
J	133	D G	- e	s G a K L T D T E I K A L L L N L F T A G T D T S S	161	
K	283	E e	- -	- - - I d r N Q I e q L c L d L F A A G T D T T S S	306	

A	311	S T V E W A I A E L I I R N P K I L a Q A Q Q E I D k V V G R	340
B	297	S T t E W A I A E L I R H P K I L a Q v Q Q E M D s V V G R	326
C	319	S T V E W C I A E L I V R H P e I L a Q v Q K f E L D s V V G K	348
D	309	S T V D W A I A E L I R H P d I M v K A Q E E L D i V V G R	338
E	309	S T V E W A I A E L I R H P H M L a R v Q K f E L D d f V G H	338
F	306	S T V E W A I A E L I R H P Q I L k Q A R E E I D a V V G Q	335
G	309	S T V E W A V A E L L R H P K t L a Q v R Q E L D s V V G K	338
H	315	S T V E W A I A E L L R N P K I L n Q A Q Q E L D i V V G Q	344
I	275	S T V E W A M A E L I I R N P K L L v Q A Q E E L D r V V G p	304
J	162	S T V E W A I A E L I I R N P e V L v Q A Q Q E L D r V V G p	191
K	307	n T L E W A M A E L L Q N P H t L q K A Q E E L a q V I G K	336

F

Figure 20f

F

A	341	d	R L V g E l D L a Q L t Y L E A I V K E T F R L H P S T P	370
B	327	d	R L I A E A D I p N L t Y f Q A V I K E v F R L H P S T P	356
C	349	n	R V V k E A D L a g L P P L Q A V V K E N F R L H P S T P	378
D	339	d	R p V n E S D I a Q L P Y L Q A V I K E N F R L H P p T P	368
E	339	d	R L V T E S D I p N L P Y L Q A V I K E T F R L H P S T P	368
F	336	d	R L V T E l D L s Q L t Y L Q A L V K E v F R L H P p T P	365
G	339	n	R L V S E T D L n Q L P Y L Q A V V K E T F R L H P p T P	368
H	345	n	Q L V T E S D L t d L P F L Q A I V K E T F R L H P S T P	374
I	305	n	R f V T E S D L p Q L t F L Q A V I K E T F R L H P S T P	334
J	192	s	R L V T E S D L p Q L a F L Q A V I K E T F R L H P S T P	221
K	337	g	K q V e E A D V g r L P Y L r C i V K E T T R i H P A A P	366

A	371	L S L P R I A S E S C E I N G Y f I P K G S T L L L N V W A	400
B	357	L S L P R V A n E S C E I N G Y h I P K N T T L L V N V W A	386
C	379	L S L P R I A h E S C E V N G Y i I P K G S T L L V N V W A	408
D	369	L S L P H I A S E S C E I N G Y h I P K G S T L L t N I W A	398
E	369	L S L P R M A A E S C E I N G Y h I P K G S T L L V N V W A	398
F	366	L S L P R I S S E S C E V d G Y y I P K G S T L L V N V W A	395
G	369	L S L P R L A e d d C E I d G Y i I P K G S T L L V N V W A	398
H	375	L S L P R M g A Q g C E I N G Y f I P K G A T L L V N V W A	404
I	335	L S L P R M A A E d C E I N G Y y V s e G S T L L V N V W A	364
J	222	L S L P R M A S E g C E I N G Y s I P K G S T L L V N V W S	251
K	367	L T I P R k v e E d v E L s t Y i I P K d S q V L V N V W A	396

G

Figure 20g

G

A	401	I A R D P n a W A D P L E F R P E R F L P G G E K P k V D V	430.
B	387	I A R D P e V W A D P L E F K P E R F L P G G E K P N V D V	416
C	409	I A R D P n V W d E P L E F R P E R F L k G G E K P N V D V	438
D	399	I A R D P d q W S D P L a F K P E R F L P G G E K s G V D V	428
E	399	I S R D P a e W A D P L E F K P E R F L P G G E K P N V D I	428
F	396	I A R D P k M W A D P L E F R P s R F L P G G E K P G a D V	425
G	399	I A R D P k V W A D P L E F R P E R F L t G G E K a d V D V	428
H	405	I A R D P n V W T n P L E F n P h R F L P G G E K P N V D I	434
I	365	I A R D P n a W A n P L D F n P t R F L a G G E K P N V D V	394
J	252	I A R D P s I W A D P L E F R P a R F L P G G E K P N V D V	281
K	397	I g R n s d L W e n P L v F K P E R F w e s - - - e I D I	422

A	431	R G N D F E V I P F G A G R R I C A G M n L G I R M V Q L M	460
B	417	K G N D F E L I P F G A G R R I C A G L S L G L R M V Q L M	446
C	439	R G N D F E L I P F G A G R R I C A G M S L G I R M V Q L M	468
D	429	K G s D F E L I P F G A G R R I C A G L S L G L R t I Q f L	458
E	429	R G N D F E V I P F G A G R R I C A G M S L G L R M V H L M	458
F	426	R G N D F E V I P F G A G R R I C A G M S L G L R M V Q L L	455
G	429	K G N D F E V I P F G A G R R I C A G V g L G I R M V Q L L	458
H	435	K G N D F E V I P F G A G R R I C S G M S L G I R M V H L L	464
I	395	K G N D F E V I P F G A G R R I C A G M S L G I R M V Q L V	424
J	282	R G N D F E V I P F G A G R R I C A G M S L G L R M V Q L s	311
K	423	R G r D F E L I P F G A G R R I C p G L p L a M R M I p V a	452

H

Figure 20h

H

A	461	i A T L I H A F n W D L v s G q P E m L N M E E A Y G L T
B	447	T A T L a H T Y D W a L A d G L m P E k L N M D E A Y G L T
C	469	T A T L n H A F D f D L A d G q i P E s L N M E E A Y G L T
D	459	T A T L V Q g F D W E L A G G V t P E k L N M E E S Y G L T
E	459	T A T L V H A F n W a L A d G L t a E k L N M D E A Y G L T
F	456	i A T L V Q T F D W E L A N G L e P E m L N M E E A Y G L T
G	459	T A S L i H A F D l D L A N G L i a Q n L N M E E A Y G L T
H	465	v A T L V H A F D W D L v N G q s v E t L N M E E A Y G L T
I	425	T A S L V H S F D W a L i d G L k P E k L d M E E g Y G L T
J	312	T A T L V H S F n W D L i N G M s P d k L d M E E A Y G L T
K	453	i g S L L n S F n W k L y G G I a P k d L d M q E k F G I T
A	491	L Q R A d P L V V H P R P R L e a Q a Y i g
B	477	L Q R k v P L M V H P t r R L S a R V Y n s g f
C	499	L Q R A d P L V V H P K P R R
D	489	L Q R A v P L V V H P K P R L A p n V Y g l g s g
E	489	L Q R A a P L M V H P R t R L A p Q a Y k t s s s
F	486	L Q R A a P L M V H P K P R L A p H V Y e s i
G	489	L Q R A e P L L V H P R P R L A t H V Y
H	495	L Q R A v P L M L H P K P R L q p H L Y t l n
I	455	L Q R A s P L I V H P K P R L S a Q V Y c m
J	342	L Q R A s P L I V H P K P R L A s s M Y v k
K	483	L a K A q P L L a i P t P

Figure 20i